Refine Search

Search Results -

Terms	Documents
L16 and ("check-in" or "check in" or "checking in")	3

Database: US Pre-Grant Publication Full-Text Database; US Patents Full-Text Database; US OCR Full-Text Database; EPO Abstracts Database; JPO Abstracts Database; Derwent World Patents Index; IBM Technical Disclosure Bulletins

Search: L17

Refine Search | Recall Text | Clear | Interrupt

Search History

DATE: Monday, September 27, 2004 Printable Copy Create Case

Set Name side by side	Query
	DB=PGPB,EPAB,JPAB,DWPI,TDBD; THES=ASSIGNEE; PLUR=YES; OP=OR
L17	L16 and ("check-in" or "check in" or "checking in")
L16	L15 and airport
L15	(securit$ with (level$ or degree or rat$)) and @pd<=20011015
	DB=USPT; THES=ASSIGNEE; PLUR=YES; OP=OR
L14	L13 and airport
L13	L12 and (code with entry)
L12	L11 and ("third party" or "third-party" or party or vendor or agent or agency)
L11	L10 and database
L10	L9 and ("check-in" or "check in" or "checking in")
L9	L6 and l1
L8	L7 and l3
L7	L6 and l2
L6	705/35,5,40,41,42,43,44,26,27;235/380,384;382/15,116,117,118,119,124;707/3,4,5,6,7,9,10.ccls.

L5 L3 and l1

L4 L3 and l2

L3 6119096.pn.

L2 L1 and check$

L1 (securit$ with (level$ or degree or rat$)) and @ad<=20011015

END OF SEARCH HISTORY

L17: Entry 1 of 3 File: PGPB Sep 13, 2001

PGPUB-DOCUMENT-NUMBER: 20010020935
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20010020935 A1

TITLE: Smart electronic label employing electronic ink

PUBLICATION-DATE: September 13, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Gelbman, Alexander	Mountain Lakes	NJ	US	

APPL-NO: 09/ 760363 [PALM]
DATE FILED: January 12, 2001

RELATED-US-APPL-DATA:
Application 09/760363 is a continuation-in-part-of US application 09/393553, filed September 10, 1999, PENDING
Application is a non-provisional-of-provisional application 60/218812, filed July 18, 2000,
Application is a non-provisional-of-provisional application 60/099888, filed September 11, 1998,

INT-CL: [07] G09 G 5/00

US-CL-PUBLISHED: 345/173
US-CL-CURRENT: 345/173

REPRESENTATIVE-FIGURES: 4

ABSTRACT:

The present invention provides for smart and dumb implementations of a stand-alone, remotely updateable, remotely alterable, flexible electronic label. The electronic label provides for displaying information in connection with a mammal, non-mammal, an item or location. The label includes a display assembly having electronic ink disposed on a support, one or more antennas for sending or receiving signals corresponding to one of instructions, programs, data or selected indicia to be displayed by said display assembly, a storage element in circuit with the antenna for storing the instructions, programs, data and indicia, and one or more processors for intelligently determining the indicia to be displayed by the display assembly, for controlling and coordinating operation of the label, and for generating output signals for instructing the display assembly to display the indicia.

RELATED APPLICATIONS

[0001] This application is a continuation-in-part of U.S. patent application Ser. No. 09/393,553, filed Sep. 10, 1999, and claims priority to provisional patent application Ser. No. 60/218,812 filed Jul. 18, 2000, the contents of which are hereby incorporated by reference.

L14: Entry 3 of 4 File: USPT Apr 25, 2000

US-PAT-NO: 6055512
DOCUMENT-IDENTIFIER: US 6055512 A

TITLE: Networked personal customized information and facility services

DATE-ISSUED: April 25, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Dean; Robert John	Bishops Stortford			GB
Unitt; Brian Michael	Bishops Stortford			GB
Kanabar; Yashvant	Bishops Stortford			GB
McCaughan; Daniel Vincent	Hollywood			IE

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Nortel Networks Corporation	Montreal			CA	03

APPL-NO: 08/ 889602 [PALM]
DATE FILED: July 8, 1997

INT-CL: [07] G06 F 17/60

US-CL-ISSUED: 705/17; 395/200.31, 395/200.32, 395/200.47, 395/200.48, 705/26, 705/27
US-CL-CURRENT: 705/17; 705/26, 705/27, 709/201, 709/202, 709/217, 709/218

FIELD-OF-SEARCH: 705/1, 705/17, 705/26, 705/27, 395/200.31, 395/200.32, 395/200.47, 395/200.48

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected Search ALL Clear

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	3555196	January 1971	Singer	379/207
☐	3771139	November 1973	Digby	711/108
☐	4202041	May 1980	Kaplow et al.	341/26
☐	4707853	November 1987	Hasegawa	379/221
☐	4763354	August 1988	Fukushima et al.	379/165

☐	4765666	August 1988	Bergeron	463/25
☐	4935956	June 1990	Hellwarth et al.	379/112
☐	5048085	September 1991	Abraham et al.	380/25
☐	5065429	November 1991	Lang	380/25
☐	5148481	September 1992	Abraham et al.	380/46
☐	5195130	March 1993	Weiss et al.	379/93.13
☐	5231634	July 1993	Giles et al.	370/348
☐	5339239	August 1994	Manabe et al.	705/1
☐	5422953	June 1995	Fischer	380/23
☐	5497411	March 1996	Pellerin	455/411
☐	5530961	June 1996	Janay et al.	345/334
☐	5532463	July 1996	Debelleix et al.	424/473
☐	5557518	September 1996	Rosen	380/24
☐	5572572	November 1996	Kawan et al.	379/90.01
☐	5576951	November 1996	Lockwood	705/27
☐	5655012	August 1997	Tsuchida et al.	379/178
☐	5682525	October 1997	Bouve et al.	707/104
☐	5699526	December 1997	Siefert	705/27
☐	5710884	January 1998	Dedrick	395/200.47
☐	5764639	June 1998	Staples et al.	370/401
☐	5873076	February 1999	Barr et al.	707/3
☐	5878142	March 1999	Caputo et al.	380/25
☐	5884271	March 1999	Pitroda	705/1

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0 810 538	March 1997	EP	
2638002	1988	FR	
4213797A1	October 1993	DE	
62-113267	May 1987	JP	
5089302	April 1993	JP	
5-89302	April 1993	JP	
2289598	November 1995	GB	
WO 92/09955	June 1992	WO	
WO 96/17476	June 1996	WO	

OTHER PUBLICATIONS

Balch, Karen, Varbusiness, No. 815, 86, "It's in the Cards.", Oct. 1, 1992.
McKie, Stewart, DBMS, vol. 9, No. 7, p. 42, "The Informix Enterprise Strategy.",

Jun. 1996.
AT&T Direct Service, 108-17, AT&T May 1996.
AT&T Enhanced Customer Services, COL Jul. 1996.

ART-UNIT: 274

PRIMARY-EXAMINER: Trammell; James P.

ASSISTANT-EXAMINER: Rosen; Nicholas David

ATTY-AGENT-FIRM: Lee, Mann, Smith, McWilliams, Sweeney & Ohlson

ABSTRACT:

A service terminal facility is provided at a public access location, for example in a hotel, hospital or airport, the service terminal facility available for providing electronic information services to users, in response to input of a portable data storage medium, for example a smart card or the like. A smart card contains stored data describing user specified information such as contacts names, personal details and medical information and personal interest information. The service terminal comprises a search engine for searching the user data and comparing data types within the user data with general data stored locally at the service terminal. The service terminal selects data corresponding to data types specified in the user data and displays these on the graphical user interface at the service terminal, or at a user interface connected with the service terminal. The user data may specify one or more data sources or service providers from which electronic data services of interest to the user can be obtained. The service terminal may obtain listings of data from remote data sources and/or service providers and display these on the graphical user interface and/or user interface. The user may instruct downloading of electronic data or electronic information services from remote data sources or service providers from the service terminal for delivery to the graphical user interface or the user interface.

7 Claims, 10 Drawing figures

Previous Doc Next Doc Go to Doc#

L14: Entry 4 of 4 File: USPT Feb 2, 1999

US-PAT-NO: 5866888
DOCUMENT-IDENTIFIER: US 5866888 A
** See image for Certificate of Correction **

TITLE: Traveler security and luggage control system

DATE-ISSUED: February 2, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Braviman; Richard	Smithtown	NY		
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Vingsbo; Stefan G.	Houston	TX		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Symbol Technologies, Inc.	Holtsville	NY			02

APPL-NO: 08/ 411289 [PALM]
DATE FILED: March 27, 1995

PARENT-CASE:
BACKGROUND OF THE INVENTION This application is a division of U.S. patent application Ser. No. 07/923,771 filed Aug. 3, 1992 now U.S. Pat. No. 5,401,944, which is a continuation-in-part application combining U.S. patent application Ser. No. 07/642,775 filed Jan. 18, 1991 now U.S. Pat. No. 5,159,635, and U.S. Ser. No. 07/616,026 filed Nov. 20, 1990 now abandoned, which applications are relied upon and incorporated by reference herein.

INT-CL: [06] G06 F 17/00

US-CL-ISSUED: 235/375; 235/462, 235/384
US-CL-CURRENT: 235/375; 235/384, 235/462.13

FIELD-OF-SEARCH: 235/379, 235/382, 235/384, 235/375, 235/462, 902/3, 902/4, 902/5

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	3752312	August 1973	Soltanoff	209/3.3
☐	4065343	December 1977	Stumpe	235/462 X
☐	4634849	January 1987	Klingen	235/487
☐	4647917	March 1987	Anderson, III et al.	340/572
☐	4707592	November 1987	Ware	235/379
☐	4775246	October 1988	Edelmann et al.	380/23
☐	5051565	September 1991	Wolfram	235/384
☐	5163098	November 1992	Dahbura	380/24
☐	5243655	September 1993	Wang	235/462 X

ART-UNIT: 286

PRIMARY-EXAMINER: Gross; Anita Pellman

ASSISTANT-EXAMINER: Lee; Michael G.

ATTY-AGENT-FIRM: Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P.

ABSTRACT:

A two-dimensional bar code is used to identify a traveler's luggage, permitting the luggage to be tracked and, if desired, to be delivered to the traveler's ultimate destination (e.g., a hotel). If the traveler is traveling on an airline, a corresponding two-dimensional bar code is applied to the traveler's boarding pass. A two-dimensional bar code reader is used to read the boarding-pass bar code of each enplaning passenger; comparison of these bar codes with luggage bar-code data permits an alarm to be raised if each item of checked luggage is not matched by an enplaned passenger. The boarding-pass bar code may take the form of an integrated passenger identification code for use by, e.g., rental car companies, hotels, and the like.

20 Claims, 31 Drawing figures

Previous Doc Next Doc Go to Doc#

DOCUMENT-IDENTIFIER: US 5866888 A
**** See image for Certificate of Correction ****
TITLE: Traveler security and luggage control system

Application Filing Date (1):
19950327

Brief Summary Text (4):
Traveling by air from one point to another for one or more days involves numerous transactions with several different types of services. For example, initial arrangements may be made through a travel agency, such as advanced bookings of flights, rental cars, and hotel rooms. Typically travel agencies provide their traveler customers with pocket-sized folders containing airline tickets, a detailed itinerary including the rental car and hotel information; and sometimes connecting boarding passes. Upon arrival at the airport, the travelers bags are checked; and he or she is given appropriate claim checks. At the boarding location, each traveler presents a boarding pass to a gate attendant. On the plane, the attendant assists in determining that the passengers are properly seated. Sometimes special meals are served to certain passengers who request them; and passengers with special connections are singled out. Security guards are frequently used in the baggage claim area to compare luggage claim check numbers to minimize theft and receipt of the wrong luggage. The passenger then goes to a rental car desk where appropriate identification must be shown to a rental car attendant. Upon leaving the rental car area with the car, another attendant checks the agreement, to determine authorization. Upon arrival at the hotel, the traveler receives a room assignment, and presents a credit card.

Brief Summary Text (13):
In another aspect, a carrier passenger boarding control system according to this invention comprises checked passenger data storage means; check-in means for inputting identification data to checked-in passenger data storage means, the data including passenger ID data identifying a passenger traveling aboard the carrier, and luggage ID data identifying at least one luggage item checked by the passenger for shipment aboard the carrier; means for encoding in two-dimensional bar code said passenger data in at least one boarding pass associated with passenger and means for encoding in two-dimensional bar code luggage data in at least one luggage item, each luggage tag corresponding to a boarding pass; at least one of (a) at least one luggage tag having encoded therein two-dimensional bar code corresponding to luggage item final destination data identifying a destination of the luggage item subsequent to completion of travel aboard the carrier, and (b) boarding pass having encoded therein two-dimensional bar code corresponding to passenger optional travel preference data; boarded-passenger data storage means, linked with checked in passenger storage means; and boarding-pass reader means for reading the two-dimensional bar code in one or more boarding passes and storing the passenger ID data encoded therein in boarded-passenger data storage means.

Drawing Description Text (12):
FIG. 16 is a table listing the number of error correction codewords for a given

security level in PDF417;

Drawing Description Text (18):
FIG. 22 is a flow diagram of the steps performed by the low-level decoder in FIG. 21 for determining the dimensions and security level of the symbol being scanned;

Detailed Description Text (7):
Referring to FIG. 3, one typical host-computer architecture is shown. The host processor 10 maintains a database management system (DBMS), employing suitable database management software similar to that commercially available, to which the remote units 15 make entries or inquiries via the base stations 12, 13, and 14. The host processor 10 has a CPU 20 which may be a microprocessor device of the 80386 type manufactured by Intel Corporation, for example, and the CPU accesses a memory 21 via a main bus 22 to execute instructions. Various I/O processors 23 are used to access peripherals such as keyboard, video display, etc., as well as disk storage 24 for the database system and other computer functions. A communications adapter 25 couples the CPU 20 via the main bus 22 to the link 11. This communications link 11 may be of the serial type such as RS-232, or alternatively the link 11 may use one of the available local area network (LAN) type of protocols.

Detailed Description Text (16):
FIGS. 7 through 12 set forth flow-chart logic diagrams of certain database management functions and the like that are performed by the illustrative embodiments. Those skilled in the art will appreciate that the actual optimum organization and structure of software to control various hardware components in accordance with the invention will depend greatly on the characteristics of the specific hardware with which the invention is implemented, and likewise that functions shown as implemented in software can equivalently be implemented in, e.g., discrete-logic hardware and vice versa. By and large, the flow charts do not set forth common error trapping/handling, boundary condition detection, and similar conventional functions.

Detailed Description Text (18):
Referring to FIG. 7 (a Yourdon-DeMarco data flow diagram), a novel ticketing system may augment this approach by reducing the likelihood that persons who check luggage will subsequently fail to board the flight without being detected. The ticketing system may include a terminal 15 generally of the kind described above and located, e.g., at an airline ticket counter. A ticketing agent may use the terminal 15 to enter information relating to e.g., the passenger's origination and destination points, scheduled departure and arrival times, and the like.

Detailed Description Text (19):
Notably, the terminal 15 is used to enter a passenger identification code that may be assigned by the airline or other carrier at check-in time. The passenger identification code may be the next available number from a convenient series of number, or it may be derived in any convenient manner, e.g., by using a suitable hashing function that takes as inputs one or more of the flight information, the passenger's name or social security number, and the like. In one embodiment, the memory 31 of the base station 12, 13, or 14 may include instructions for the CPU 30 to generate a passenger identification code; the information used in the generation process may be obtained from the remote unit 15 and/or from a flight-information data file 74, for example, maintained by the host computer 10 in disk storage 24.

Detailed Description Text (21):
Referring still to FIG. 7, the PDF417 two-dimensional passenger identification code is also printed in a bar code 72 on a luggage tag (or on a stick-on label to be applied to a luggage tag) that is attached (e.g., at the ticket counter) to any luggage being checked by the passenger. The bar code 72 may also include the passenger's name, address, and destination information for quick identification and passenger notification in the event the luggage goes astray. Because the PDF417 bar

code is of sufficient capacity, the ticket agent may additionally enter a brief description of each piece of luggage at the terminal, perhaps using appropriate menus of luggage descriptions, as well as all the information required to directly transport luggage to the destination desired by the passenger after leaving the carrier. This information may be included in the two-dimensional boarding-pass bar code 70 as well as in the luggage two-dimensional bar code 72.

Detailed Description Text (23):
Referring now to FIG. 8, in an alternative embodiment the boarding passes are preprinted with two-dimensional bar-coded passenger identification codes 70 (e.g., boarding pass serial numbers). Similarly, numbered ticket-counter luggage tags, of the kind customarily fastened on bags when the bags are checked, may be preprinted with bar-code serial numbers 72. The ticket agent may use a fixed counter-mounted scanner (not shown) or a hand-held reader such as those shown in FIG. 5 to scan a boarding pass bar code 70 and all associated luggage tag bar codes 72; the host computer 10 may be programmed to receive the data from these scans and to create an association between the passenger and his or her checked bags in one or more data files such as, for example, a passenger ID file 76 and/or a baggage ID file 78.

Detailed Description Text (24):
In another alternative embodiment, the ticket agent may be equipped with peel-off/stick-on bar code labels of two kinds. The first kind includes bar codes of passenger identification codes 70, to be peeled off and applied to boarding pass that did not already have a passenger identification code printed thereon. The second kind includes bar codes of luggage identification codes 72, to be peeled off and applied to luggage tags that did not already have such bar code labels. The specific bar codes allocated to a given passenger are scanned as described above to create an association between the passenger and his or her checked bags in the data files 76, 78 maintained by the host computer 10.

Detailed Description Text (25):
In still another alternative embodiment, a single kind of peel-off/stick-on bar code labels 70, numbered in a convenient sequential series (e.g., consecutive numbers, odd numbers, even numbers, every five minutes, etc.), are used. As illustrated in FIG. 9, when a passenger presents bags to be checked, (1) the next available numbered bar code label is applied to his or her boarding pass; (2) numbered bar code labels are applied in numerical sequence to each bag being checked by that passenger or to a luggage tag fastened thereto as described above; and (3) when all of that passenger's bags have been so labeled, the next available numbered bar code label is applied to the boarding pass. The serial numbers of the two bar codes on the passenger's boarding pass thus bracket (and thereby define a list of) the serial numbers of the bar codes applied to that passenger's checked luggage. The ticket agent may therefore scan the two boarding-pass bar codes 70 in the manner described above to identify the bags checked by the passenger in the data files maintained by the host computer 10; alternatively, each bag's bar code can be scanned for the same reason. For convenience, this alternative embodiment is referred to below as the "bracketing boarding-pass bar codes" embodiment.

Detailed Description Text (27):
At the boarding location (e.g., an airline boarding gate), a boarding verification system includes a remote terminal unit 15 that is linked to the host computer 10. Each passenger presents his or her boarding pass to a gate agent/operator who scans the bar code 70 using a reader such as shown in FIG. 5 in conjunction with, e.g., a terminal unit 15 and e.g., a base station 12, 13, or 14 (or alternatively using a fixed terminal 15 that has a landline-type link to the host computer 10). The terminal 15 transmits the passenger identification codes of boarded passengers to the host computer 10 either individually or in batch, as convenient. For example, the terminal 15 may be used to transmit this information in a batch after all passengers have boarded but just prior to closing up the aircraft for departure.

Detailed Description Text (34):
Unclaimed luggage can conveniently be identified by airport or airline personnel, without opening the luggage, by scanning the luggage bar code 72. If the bar code 72 includes the passenger's name and address, it can be read by scanning it with a remote terminal 15. The luggage identification information encoded into the two-dimensional bar code 72 can contain the entire data base with all the information needed in order to identify and enable the passenger in question to be contacted (or, if the luggage has been misrouted to the wrong airport, to redirect it to the proper destination) without further data base accessing.

Detailed Description Text (35):
A passenger who checks luggage at a ticket counter may desire to have the luggage delivered to his or her hotel, office, home, or other destination. This could present an attractive alternative to carrying on large hanging bags, for example, or to checking luggage and being forced to wait 30 minutes to an hour at the destination airport to reclaim the checked luggage.

Detailed Description Text (36):
The system described herein may be used advantageously to implement such an alternative. Information about the desired delivery destination, e.g., the address, may be entered by the ticket agent using the ticketing terminal 15; alternatively, this information may be taken by a travel agency and entered using a travel agency terminal 15 as described below. The destination information may be included in the luggage bar code 72, which may be printed on a readily distinguishable stock (e.g., stock of a particular color or an especially bright color, etc.) to facilitate sorting at the destination airport.

Detailed Description Text (37):
When luggage from different flights arrives at a destination airport, luggage to be delivered is separated from luggage to be reclaimed at the baggage-claim area and placed temporarily in a receiving area. The luggage bar codes 72 for the various luggage pieces are scanned to obtain their delivery-destination information, e.g., by a remote terminal 15 upon arrival in the receiving area. A host computer 10 linked to the terminal 15 maintains a current list of luggage to be delivered and the destinations thereof, e.g., in a data file system as data files 76 and 78, possibly keyed to destination identifying data such as nine-digit ZIP codes, hotel names, or similar identifiers. If desired, a human-readable notation about the destination may be made by hand on the luggage tag for convenience.

Detailed Description Text (38):
Periodically (say, once per hour), the host computer 10 causes one or more lists to be printed of luggage to be delivered, sorted by destination into delivery groups. Each delivery group may be assigned to a van or other vehicle, in all likelihood several delivery groups to a vehicle. Using the lists as pick lists, delivery personnel load luggage into the appropriate vehicle. A terminal 15 is used to scan each bag's bar code 72 and transmit its identifying information to the host computer 10, which notes the fact that the bag has left the airport. The terminal's display 49 may be used to view the bag's destination as encoded in the bar code 72, thus providing a check that the bag is about to be taken to the correct destination.

Detailed Description Text (39):
At each hotel or other destination, delivery personnel or hotel service personnel (e.g., a bellman) unloads the luggage for that destination. A terminal 15 is used as described above to verify that each bag is being unloaded at the correct destination. This information may be transmitted by the terminal 15 to a host computer 10 in the delivery vehicle, or alternatively through an appropriate radio, cellular, or other link to the host computer 10 at the airport.

Detailed Description Text (42):

Lost or damaged luggage is sometimes valued for compensation purposes as a function of the weight of the luggage unless the passenger declares a higher value and pays a fee. The ticket agent can query the passenger at check-in time about any higher value which the passenger wishes to declare for the luggage. This information and the weight of each bag (which may be obtained from a scale, not shown) may be included in the printed bar codes 72 and 70 on both the luggage and the passenger's boarding pass. Alternatively, to prevent unauthorized persons from scanning the luggage bar code in search of high-value pilferage targets, the declared value information may be printed solely in the boarding-pass bar code 70. The ticket agent may of course collect additional fees from passengers who declare luggage values in excess of predetermined limits.

Detailed Description Text (44):
The traveler security and luggage control system described above can be expanded to provide improved convenience for travelers. By way of background, it will be noted that travel agencies are frequently used by business travelers to make advanced booking of airline flights, rental cars, and hotel rooms. Travel agencies typically provide their traveler-customers with pocket-sized folders containing airline tickets and a detailed itinerary including rental car and hotel information. Boarding passes are often included in such folders.

Detailed Description Text (45):
Referring to FIG. 9, a travel agency terminal 15, including or linked with a base station 12, 13, or 14 if used, may include a printer such as the printer 33a capable of printing bar codes. The terminal 15 may be linked, e.g., via a landline, to an airline computer 10 that handles airline reservations and ticketing for travel agencies. The terminal 15 may be programmedin a manner known to those of ordinary skill to allow it to be used by a travel agent to make a flight reservation and obtain an advance seat assignment for a traveler in the conventional manner; the airline computer 10 returns a message including reservation and seat assignment information to the terminal 15 in a conventional manner.

Detailed Description Text (46):
The host computer 10 also returns a message (which of course may be a part of the message mentioned above) that includes a passenger identification code to the terminal 12. Travel agency personnel may then operate the printer to print a traveller ID bar code 101, e.g., on boarding-pass stock, generally in the manner described above. The traveler ID bar code 101 may be a consolidated one that includes the passenger identification code and other information as described herein to the extent such information is known at the time.

Detailed Description Text (47):
The travel-agency customer may desire to check luggage at the airline ticket counter. The airline ticket agent may scan the customer's traveler ID bar code as described above to obtain the customer's passenger identification code and other pertinent information, and print such information on luggage-tag bar codes 72 as described above. Furthermore, if the customer desires to declare a value for the luggage, in a supplemental baggage-value bar code 103, e.g., on a stick-on label to be applied to the boarding pass. In the process, the ticket agent could inquire of the customer about advance beverage orders, special meal orders, and the like in the manner described above.

Detailed Description Text (48):
The travel agency terminal 15 may additionally be linked to either or both of a rental car company computer 10 and a hotel system computer 10. When the travel agency terminal 15 is used to make reservations for a rental car or a hotel room, the rental car or hotel computer 10 returns a message to the terminal 12 that includes a customer identification code in generally the same manner as described above for airline passenger identification codes. The traveler ID bar code printed

on the customer's boarding pass may then include information required by the hotel or rental car company in question, e.g., name, address, credit card information, driver's license number, and the like. Of course, if a standardized system is used for assigning identification code, a single traveler ID code could be used as the airline passenger identification code, the hotel customer identification code, etc.

Detailed Description Text (49):
The Traveler ID bar code is used in conjunction with one or more customer check-in terminals 15 at, e.g., a rental car customer service counter or a hotel registration desk. When the customer arrives at the counter or registration desk, he or she presents his boarding pass or other record device to the attendant, who operates the terminal 12 to scan the bar code on the boarding pass. The attendant may ask the customer for confirmatory identification, e.g., a driver's license, and operate the terminal (e.g., by pressing an ENTER key) to confirm the check-in on the customer. Alternatively, the customer himself could hold up the bar code in front of a fixed terminal 15 for comparatively unattended operation.

Detailed Description Text (50):
A hotel restaurant, gift shop, golf pro shop, executive office suite, or similar ancillary business may operate customer charge stations in conjunction with the boarding-pass bar code. A customer charge terminal 15 is linked with a hotel host computer 10, e.g., via base station 12, 13, or 14 if used. The hotel host computer 10 in turn is linked with the hotel's customer check-in terminal 15. When a customer checks in by presenting a boarding pass as described above, the host computer 10 notes the fact along with any other desired information such as the customer's credit limit. The customer may make charges by presenting his or her boarding pass; the bar code on the boarding pass is scanned by the terminal operator and the appropriate charge information is passed to the host computer 10 to be added to the customer's bill.

Detailed Description Text (52):
In one embodiment shown in FIG. 13, a first side of the card includes a printed itinerary, perhaps printed in a small but readable font on a conventional laser printer; the other side of the card may include partitions in which bar codes may be printed or applied as stick-on labels, in much the same manner as exit and entry stamps are applied to partitioned sections of passport pages at customs control points. The partitions may be labeled "Airline 1," "Airline 2," "Hotel 1," etc., as shown in FIG. 5. In another embodiment, the partitions are unlabeled to allow maximum flexibility in the application of bar codes. A traveler would then conveniently be able to carry his tickets, boarding passes, rental car and hotel check-in identification, baggage claim checks, and the like, in a single convenient record device.

Detailed Description Text (54):
Most major rental car agencies commonly station guards at their parking lot exits. These guards verify that the driver of an existing car is indeed an authorized renter.

Detailed Description Text (69):
A PDF417 symbol can also encode data with error correction capability. The level of error correction capability, called the "security level," is selected by the user and ranges from 0 to 8.

Detailed Description Text (70):
This means, for example, that at level 6, a total of 126 codewords can be either missing or destroyed and the entire symbol can be read and decoded. FIG. 16 is a table showing the relationship between the security level of the PDF417 symbol and the number of error correction codewords C.sub.1.

Detailed Description Text (71):
In addition to correcting for missing or destroyed data (known as "erasures"), PDF417 can also recover from misdecodes of codewords. Since it requires two codewords to recover from a misdecode, one to detect the error and one to correct it, a given security level can support half the number of misdecodes that it can of undecoded codewords.

Detailed Description Text (73):
The row indicator codewords in a PDF417 symbol contain several key components: row number, number of rows, number of data columns, and security level. Not every row indicator contains every component, however. The information is spread over several rows, and the pattern repeats itself every three rows. The pattern for encoding the information in the row indicator codewords can be illustrated as follows:

Detailed Description Text (75):
Row 1: L.sub.1 (row #, security level) R.sub.1 (row #, # of rows)

Detailed Description Text (76):
Row 2: L.sub.2 (row #, # of columns) R.sub.2 (row #, security level)

Detailed Description Text (99):
In step 152, the low-level decoder attempts to determine the dimensions and the security level of the symbol being scanned. Specifically, this step determines the number of rows, the number of data columns, and the security level of the symbol from the left and right row indicator codewords. These dimensions are then used to initialize a two-dimensional codeword matrix and other related parameters for decoding the symbol. Each location in the matrix contains both a codeword value and an associated confidence weight, which are initially set to a null or empty value. If the dimensions and security level of the symbol cannot be determined, then the scan is aborted. This step will be discussed in further detail below in connection with FIG. 22.

Detailed Description Text (100):
Continuing in FIG. 21, step 154 is the first step in a control loop in which the rows of the two-dimensional bar code symbol are repeatedly scanned and the codeword values are filled into the codeword matrix. The steps of the control loop are each repeated until the number of codewords remaining in the matrix which have not been successfully decoded is small enough that the rest of the matrix can be determined using the built-in error correction capability of the symbol. Thus, in step 154, if the number of codewords which have not been successfully decoded is less than the error correction capability of the symbol based on the security level (see FIG. 4), an attempt is made to correct the matrix using the error-correction codewords. If the attempted error correction is successful, then in step 156, the control loop is exited and scanning is terminated in step 158. Otherwise, if the attempted error correction is not successful, then the following steps 160-164 are performed to try to decode additional codewords to fill in the matrix.

Detailed Description Text (103):
FIG. 22 is a flow chart showing in greater detail the sequence of steps for determining the dimensions and security level of a symbol as referred to in step 152 of FIG. 21 above.

Detailed Description Text (105):
Step 172 then decodes the first codeword immediately adjacent to either the start or stop pattern found in the previous step. As shown in FIG. 15, this codeword will be either a left or right row indicator codeword containing the row number and either the number of rows, the number of data columns, or the security level of the symbol. If both a start and a stop pattern are found, then both the left and the right row indicators are decoded. The sequence of steps for decoding an individual codeword are discussed further below in connection with FIG. 27.

Detailed Description Text (106):
Continuing in FIG. 22, in step 174 the particular dimension or security level encoded in the row indicator is extracted from the codeword value and the cluster number determined in the previous step 172. For example, for a left row indicator codeword with a cluster number of 0, the number of rows is extracted from the codeword value.

Detailed Description Text (107):
A confidence weight assigned to each of the dimensions and the security level is initially set to 0. Steps 176-184 update both the current value and the confidence weight of the dimension or security level extracted in the previous step in the following way. First, the particular parameter, say the number of rows, is compared to the current value of the number of rows obtained from previous decodes. If the current value of the number of rows and the newly decoded value are the same, as determined in step 176, then the confidence weight assigned to the number of rows is increased in step 178. If the current value and the newly-decoded value are different, however, then the confidence weight is decreased in step 180. If the confidence weight assigned to the particular parameter is decreased below zero as determined in step 182, then the newly decoded value is substituted for the current value and a new minimum weight is assigned to the parameter in step 184.

Detailed Description Text (108):
Step 186 determines whether the confidence weight for all three parameters, i.e., number of rows, number of data columns, and security level, exceeds a predetermined threshold. If so, then the two-dimensional codeword matrix is initialized in step 188 based on the current values of the number of rows and the number of columns. The number of correctable errors may also be determined from the current value of the security level according to the table in FIG. 16. If all three confidence weights do not exceed the threshold in step 186, however, then program control returns to step 170 to begin searching for the start and stop patterns in a new scan line. Steps 170-184 are repeated until all three parameters have been successfully decoded with a high degree of confidence.

Detailed Description Text (144):
Returning briefly to step 154 in FIG. 21, each time after the codeword matrix has been filled in with the new vector of codeword values and the confidence weights have been updated, an attempt is made to fill in the rest of the matrix using the built-in error correction capability of the symbol. The number and location of codewords which have not yet been successfully decoded may be determined by comparing the confidence weights assigned to each of the codeword values in the matrix with a predetermined threshold. Those values having confidence weights below the threshold are considered to not yet be decoded. If the number of codewords not yet decoded is less than the error correction capability of the symbol as determined by the security level, then an attempt is made to correct the matrix.

Current US Cross Reference Classification (1):
235/384

CLAIMS:

1. An encoding/decoding carrier passenger boarding control system for use in a system for secure transmission of data, the system comprising:

encoding means including

means for generating passenger ID data and luggage ID data, the passenger ID data including a number derived from at least one of passenger name and passenger social security number and the luggage ID data including the passenger ID data and a luggage description,

means for encrypting at least some of said passenger and luggage ID data using an encryption algorithm based upon an encryption key,

means for representing said encrypted data in the form of a bar code structure, said bar code structure including codewords of bar-coded information and security level information indicating a level of error correction capability, each of said codewords representing at least one information-bearing character, and

means for transferring an image of the bar code structure onto a passenger boarding pass and passenger luggage; and decoding means including

means for scanning the bar code structure on the passenger boarding pass and the passenger luggage and converting the codewords into output signals representative of said information-bearing characters,

means for determining the level of error correction capability of the bar-coded information from the security level information,

means for determining the number of codewords that were unsuccessfully converted,

means for correcting the unsuccessfully converted codewords if the number of unsuccessfully converted codewords is less than the level of error correction capability, and

means for decrypting at least some of said information-bearing characters using a decryption algorithm based upon said encryption key.

9. An encoding apparatus for use in a traveler data management system for secure transmission of passenger and luggage ID data, the apparatus comprising:

means for generating the passenger and luggage ID data, the passenger ID data comprising a number derived from at least one of passenger name and passenger social security number, and the luggage ID data including the passenger ID data and a luggage description;

means for encrypting at least some of said passenger and luggage ID data using an encryption algorithm based upon an encryption key;

means for representing said encrypted data in the form of a bar code structure, said bar code structure including a plurality of codewords of bar-coded information and security level information indicating a level of error correction capability, each of said codewords representing at least one information-bearing character;

means for transferring an image of the bar code structure onto a passenger boarding pass and passenger luggage; and

means for reading the bar code structure to determine whether all passengers and their respective luggage have boarded or departed a transportation carrier.

13. A method of encoding and decoding carrier passenger and luggage ID data for secure transmission, comprising the steps of:

generating said passenger and luggage ID data into an encoding station the passenger ID data including a number derived from at least one of passenger name and passenger social security number and the luggage ID data including the passenger ID data and a luggage description;

encrypting at least some of said passenger and luggage ID data using an encryption algorithm based upon an encryption key;

representing said encrypted data in the form of a bar code structure, said bar code structure including codewords of bar-coded information and security level information indicating a level of error correction capability, each of said codewords representing at least one information-bearing character;

transferring an image of the bar code structure onto a passenger boarding pass and passenger luggage;

scanning the bar code structure in a separate decoding station and converting the codewords into output signals representative of said information-bearing characters;

determining the level of error correction capability of the bar-coded information from the security level information;

determining the number of codewords that were unsuccessfully converted;

correcting the unsuccessfully converted codewords if the number of unsuccessfully converted codewords is less than the level of error correction capability; and

decrypting at least some of said information-bearing characters using a decryption algorithm based upon said encryption key.

Previous Doc Next Doc Go to Doc#

L2: Entry 1 of 1 File: USPT Sep 12, 2000

DOCUMENT-IDENTIFIER: US 6119096 A
TITLE: System and method for aircraft passenger check-in and boarding using iris recognition

Detailed Description Text (12):
In a preferred embodiment, turnstiles 102 are arranged with a dogleg shape having a first passage portion 114 at an angle of 30 degrees, 45 degrees, or between 30 and 45 degrees to a second passage portion 116. First passage portion 114 has an entrance 118 at which height scanner 120 is located. A biometric sensor 112 is located in each turnstile near the junction of first passage portion 114 and second passage portion 116, so that a user approaching biometric sensor 112 through passage portion 114 can present his iris for scanning by turning his head slightly toward biometric sensor 112. Biometric sensors 112 located in turnstiles 102 are connected to height sensors 120 of each turnstile respectively, and are provided with an automatic aiming adjustment for the image gathering mechanism in biometric sensor 112. The aiming adjustment responds to the output of the height sensor to adjust the vertical aim of the image gathering mechanism, so that it adapts to users of various heights and captures the image of the iris of users regardless of their height.

Detailed Description Text (15):
Each turnstile 102 may further include a turnstile barrier mechanism 122 at the exit point of turnstile 102. The preferred embodiment for mass transit and stadium applications would include such a barrier mechanism 122 to enhance crowd control and minimize requirements for monitoring and security personnel. However, for airplane loading and other applications where an attendant will be present at the entry point, the barrier mechanism may be omitted. In fact, in such applications where space is at a premium and other security measures are already in place, the walls defining first passage portion 114 and second passage portion 116 may be omitted so that turnstile 102 is an identification station effectively consisting only of biometric sensors 112 and associated indicating, signaling, computer, and communications components. In this embodiment, the system is located at a threshold, or point of entry or exit, but provides only an indicational barrier and not a physical one. Thus, the form of the means selected for providing a turnstile function may encompass a broad range of degrees of physical barrier provided, and may in some embodiments provide only an access permission indicator without any form of physical access prevention.

Detailed Description Text (20):
The identification certainty level of the biometric comparison performed by scan control and accounting computer 104 can be adjusted appropriately depending on the circumstances and the nature of the access provided. For example, the harm associated with allowing a person to ride a transit system without an appropriate charge to his account may in some cases, particularly at peak load times, be considered more acceptable than passenger inconvenience associated with a backup at the turnstile due to an identification failure. It may be desirable to reduce the confidence level required for a match at such times, yet user accounts should be protected against accidental charges incurred by another person. Thus, in some

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instances a user may be allowed to enter without a charge to any account if the system identifies a probable but not definite match, if the identification is at a confidence level that is sufficient to make it worthwhile not to inconvenience that rider and those behind him, but not sufficient to justify a definitive charge to his account.

Detailed Description Text (23):
Referring now to FIG. 9b, the images collected by the biometric scanners located at the exit point can be appropriately compared with a subset of the overall database of stored images, representing persons who have entered the transit system but have not exited, as shown in Block 908. This operation is facilitated by the previous storage of information indicating who is in the system, as described above. Making the comparison to this subset of images, while excluding other stored user images, increases system search and response speed. The confidence level required for a match at the exit point may be downgraded, as compared to the confidence level required to determine entry, since it is assumed that a match at the exit point should definitely be found with a person "in the system" at that time. Of course, if no match is found to a user of record in the system, control passes to Block 910 for error processing. In Block 910, the search may be expanded in a second phase to encompass all available image records, the user may be directed to see an attendant for assistance, an indicator may be provided, and other desired error processing and signalling may occur.

Detailed Description Text (36):
Sensitivity to privacy concerns is important in implementing the present invention. The level of detail provided in billing statements or confirmation statements should be carefully selected to provide information sufficient to satisfy the user that charges made were legitimate, without transmitting information that might be sensitive. For example, it may be desirable to indicate on a statement the number of transit trips made in a week or month and the total fare, while omitting information such as the date, entry and exit station, and exact times of entry and exit for each trip. Detailed information identifying each transaction, and a transaction identification number or code assigned at the time of the transaction, is preferably recorded in the billing computer system in case of a customer inquiry about the accuracy of the bill. The user's account record may have each relevant transaction identification number or code entered therein so that detailed information can be obtained in case of an inquiry or challenge. However, detailed transaction information is preferably not released to anyone except the particular user in response to a specific request.

Detailed Description Text (37):
Another particularly important method of payment is the anonymous account. Some individuals may, because of privacy concerns, prefer not to identify themselves by providing name, address, etc. to the system. Of course, if the system is to transfer funds from a user account at a financial institution, or make credit card charges, an appropriate authorization is required and such authorization inherently requires personal identification. Thus, an alternative payment mechanism is needed for the anonymous account. In a preferred embodiment, anonymous accounts are provided as cash deposit accounts. Thus, if a person wants to access a transit system using the biometric identification system of the present invention, but does not want to be directly personally identified to that system, the person may register for an account anonymously, and make a cash deposit against fares or other goods and services to be charged against the account. The user's biometric data (such as an iris scan) will be recorded, but the account will be identified only with an anonymous account identifier or number rather than with the person's name and financial account information. To continue use of the account, the user will be required to make additional cash deposits to maintain a positive balance at all times, since the system will have no identifying information with which to institute collections efforts if the user owes money. To facilitate operation of anonymous accounts without service interruptions, the system may have a "low

balance" indicator which is activated as the user passes through a turnstile or makes a purchase if the remaining account balance falls below a predetermined threshold, such as $10. This indicator will remind the user to again visit the registration station, where the user will identify his or her account (by account identifier, or preferably by biometric scan of the user) and provide an additional cash deposit. If the system is one in which charges vary depending on the entry and exit points, and the balance falls below another predetermined amount (e.g. the minimum fare currently in effect or an arbitrary minimum such as $5) admission may be denied until the balance is increased, to prevent the user from becoming stuck in the system without the resources to pay the charge due upon exiting.

Detailed Description Text (45):
Another type of special purpose code that may be stored is a code indicating a discount level or an additional level of service to be applied to certain purchases of transportation, goods, and/or services. For example, a discount may be automatically provided based on membership in an organization, such as the American Association of Retired Persons or the American Automobile Association. Additional service may be provided if the user is a member of some preferred customer group such as an airline frequent traveler program. As an example, upgraded accommodations, a free drink, etc. may be automatically provided where available, based on coding of the user in the system as a member of any such exclusive customer group.

Detailed Description Text (50):
In block 308, the biometric information is obtained by scanning the person in the turnstile. In block 310, the obtained information is compared to data stored in database 106 to determine whether there is a match within a programmed level of certainty. If not, control passes to block 314 and access is rejected, and following a wait state in block 316 to allow the rejected user to leave the turnstile, the turnstile resets and is ready for the next user as control passes to block 302.

Detailed Description Text (63):
First, a portable point of purchase scanning computer 702 may be provided, preferably in a handheld form, incorporating a biometric scanner with an associated portable database for pattern matching. This handheld point of purchase scanning computer 702 may be used by concessionaires to record charges for concessions. The charge records may be communicated to scan control and accounting computer 104 via a wireless data link such as a packet radio transceiver 706, or may be held in memory and later uploaded to scan control and accounting computer 104 (also shown in FIG. 1a). Point of purchase units, either handheld or fixed, will similarly be provided at souvenir stands, fixed location concession stands, parking lot entry points and other places where funds are collected or access control is provided. For example, the identification system may be used in the manner described previously to control access to the stadium or hall, and a further identification and access control function may be performed by a scanner located at the entrance to a premium seating section, such as box seats or a club level.

Previous Doc Next Doc Go to Doc#

L14: Entry 1 of 4 File: USPT Jul 6, 2004

US-PAT-NO: 6758394
DOCUMENT-IDENTIFIER: US 6758394 B2

TITLE: Identity verification and enrollment system for self-service devices

DATE-ISSUED: July 6, 2004

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APPL-NO: 09/ 902074 [PALM]
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INT-CL: [07] G06 F 17/60

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FIELD-OF-SEARCH: 713/202, 902/1, 902/3, 902/4, 902/5, 235/379, 235/380, 235/381, 235/382, 235/382.5, 705/66, 705/67, 705/18, 705/44, 382/115, 382/116, 382/117, 382/118, 382/119, 382/124, 340/5.52, 340/5.53, 340/5.8, 340/5.81, 340/5.82, 340/5.83, 340/5.84, 348/156

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	4308522	December 1981	Paganini et al.	340/146.3SY
☐	4993068	February 1991	Piosenka et al.	380/23
☐	5341428	August 1994	Schatz	380/23
☐	5432864	July 1995	Lu et al.	382/118
☐	5550359	August 1996	Bennett	235/382

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L14: Entry 1 of 4 File: USPT Jul 6, 2004

DOCUMENT-IDENTIFIER: US 6758394 B2
TITLE: Identity verification and enrollment system for self-service devices

Application Filing Date (1):
20010709

Brief Summary Text (10):
In different embodiments, the first set of biometric data may be derived from image data on the verification instrument, from data encoded magnetically on the verification instrument, or from data encoded optically on the verification instrument. Examples of biometric data that may be used to derive the biometric data sets include facial features, fingerprints, and voice features. The textual data may be derived, for example, from data encoded magnetically or optically on the verification instrument. Alternatively, a database reference number may be extracted from the verification instrument and the textual data retrieved from the database with the database reference number.

Detailed Description Text (4):
Embodiments of the invention may therefore be adapted for performing transactions with self-service devices. As used herein, "transaction" is intended to be understood broadly as referring to any act taken between two or more parties. As described below, embodiments of the invention are particularly suitable for transactions that are performed with a "self-service device," which refers broadly to any system that allows a human to participate in a transaction without being in physical contact with another human. Examples of self-service devices include ATM's, kiosks, personal computers, personal digital assistants, etc. Certain transactions with self-service devices use "enrollment," which refers broadly to any process used to verify the identity of the human participant, and sometimes includes recording verification information to aid in future identification of the human participant.

Detailed Description Text (5):
It will thus be appreciated that embodiments of the invention may be adapted to a variety of applications that may use enrollment with self-service devices. Particular examples set forth below relate to financial systems, although embodiments find applications for any transaction system, further examples of which include: check-in procedures, such as with airlines; voting transactions; contest enrollment, etc. Aspects of the invention may thus readily by adapted for use with existing self-service financial or other systems. The structure and operation of an exemplary such system that acts as a self-service check-cashing device is provided in the '738 patent, which has been incorporated by reference. The methods of the invention may be embodied in the form of computer-readable programs for directing operation of the self-service devices, and may find general applicability in any appropriate processing environment. The methods may be implemented with any suitable hardware and software combination, but usually will include a processor, a storage medium, an input device, and an output device. The programs will usually be implemented in a high-level procedural or object-oriented language, but may alternatively be implemented in assembly or machine language.

Detailed Description Text (7):

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An overview of one embodiment of the invention is shown schematically in FIG. 1. In this embodiment, a plurality of self-service devices 102 are provided at remote locations for use by customers, such as in the form of kiosks. The self-service devices 102 may be configured generally for use in a variety of different contexts. For example, in one embodiment, the self-service devices are adapted to provide financial services, such as for cashing financial instruments. Such financial instruments may include, for example, instruments that identify a payee, such as checks, drafts, and promissory notes, or may include instruments that are not restricted to a particular payee, such as bearer paper. In other embodiments, the self-service devices may be configured to perform other types of transactions, such as check-in kiosks affiliated with airlines at an airport to check-in passengers without having to see an airline representative.

Detailed Description Text (23):
Regardless of whether the system compares biometric measures derived from biometric data or compares image data through pattern-recognition techniques, the system may be further enhanced at block 224 to compare against a Deny Enrollment List. Such a Deny Enrollment List may include biometric or image data corresponding to individuals for whom it has previously been determined that enrollment should be denied irrespective of the quality of the verification instrument they present and its ability to support their identification. Such individuals may include, for example, those with a history of delinquency with the organization that operates the enrollment system. Image or biometric data included in the Deny Enrollment List may also be supplied by law-enforcement agencies, for example, such as in the form of photographs or fingerprints.

Detailed Description Text (31):
FIG. 3 shows a detail of block 220 to illustrate different ways in which textual data may be extracted from the verification instrument depending on how such textual information is provided. The variety in driver's licenses provided within the United States serves as an illustrative example, although it will be understood that this example is described in detail for explanatory purposes and is not intended to be limiting; similar types of textual information are provided on other U.S. and non-U.S. verification instruments. Every U.S. driver's license contains some degree of personal information describing the individual, such as name, address, sex, Social Security number, etc. In some states, a common linear bar code is provided on the rear of the license and provides a number that refers to a government database entry, the database entry including at least the personal information that appears on the license. Linear bar codes are typically configured so that binary-coded decimal information is provided in a pattern of alternating light and dark stripes. In other states, such a reference number is encoded on a magnetic stripe and may be extracted by swiping the card through a magnetic reader. In still other states, no such coded information appears on the driver's license, with the information being presented only in standard human-readable textual form.

Detailed Description Text (34):
If the instrument contains a reference code, such as may be the case with a linear bar code or magnetic stripe configured only to reference a government database entry, the system follows the central prong of the flow diagram. At block 316, the reference code is extracted by decoding it. Depending on how the reference code is stored, this may be done by having the customer swipe the instrument through a magnetic reader or by examining the bar code optically such as is routinely done for bar-code information in a variety of contexts. At block 320, the relevant government database is accessed, with the decoded reference code being used to access the particular database entry of interest. Information is then extracted directly from that database entry at block 324. In some embodiments, the customer may be prompted to enter data, such as a Social Security Number, that may be compared with the data retrieved from the government database; this adds an additional level of verification to confirm the identity of the customer.

Detailed Description Text (40):
At the same time, the back of the driver's license is scanned with the other of the two optical elements 412-2 to read the bar-code information. Based on the results extracted from the bar code, the appropriate state database is accessed by the central station to extract the customer's personal information. This information is recorded and associated with the stored biometric analysis, substantially reducing the possibility of fraud with the self-service device. In addition, the system may be configured to record an image of the customer's signature extracted from the verification instrument to record as part of the identification information. Such an image may thus be used in certain embodiments for signature comparison in connection with certain services. In one embodiment, the verification-instrument module is configured so that the customer need not insert the verification instrument into the self-service device in a manner that makes it inaccessible. This may be done, for example, by having the slot 408 be large enough for the customer to insert a hand or by configuring the structure 404 to be sufficiently open to permit access with the customer's hand. Such access may be useful where customers may be reluctant to turn over a verification instrument to an automated device.

Detailed Description Text (45):
Having described several embodiments, it will be recognized by those of skill in the art that various modifications, alternative constructions, and equivalents may be used without departing from the spirit of the invention. For example, embodiments of the invention may be readily adapted for enrollment with self-service devices used in other than financial contexts. Examples may include retail devices and travel check-in devices, among others. Accordingly, the above description should not be taken as limiting the scope of the invention, which is defined in the following claims.

Current US Cross Reference Classification (1):
235/380

Current US Cross Reference Classification (4):
705/44

CLAIMS:

18. The method recited in claim 1 wherein extracting textual data regarding the customer from the verification instrument comprises: extracting a database reference number from the verification instrument; and retrieving the textual data regarding the customer from a database with the database reference number.

Previous Doc Next Doc Go to Doc#

9-245231 September 1997 JP

ART-UNIT: 2876

PRIMARY-EXAMINER: Fureman; Jared J.

ATTY-AGENT-FIRM: Townsend and Townsend and Crew LLP

ABSTRACT:

A method and system are provided for authorizing a customer to perform transactions with a self-service device. A first set of biometric data regarding the customer is extracted from a verification instrument. A second set of biometric data is extracted directly from at least one feature of the customer. Textual data regarding the customer is extracted from the verification instrument. The first and second sets of biometric data are compared to determine whether they are derived from a single individual. If so, customer identification information is recorded.

39 Claims, 6 Drawing figures

Previous Doc Next Doc Go to Doc#

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L14: Entry 3 of 4 File: USPT Apr 25, 2000

DOCUMENT-IDENTIFIER: US 6055512 A
TITLE: Networked personal customized information and facility services

Abstract Text (1):
A service terminal facility is provided at a public access location, for example in a hotel, hospital or airport, the service terminal facility available for providing electronic information services to users, in response to input of a portable data storage medium, for example a smart card or the like. A smart card contains stored data describing user specified information such as contacts names, personal details and medical information and personal interest information. The service terminal comprises a search engine for searching the user data and comparing data types within the user data with general data stored locally at the service terminal. The service terminal selects data corresponding to data types specified in the user data and displays these on the graphical user interface at the service terminal, or at a user interface connected with the service terminal. The user data may specify one or more data sources or service providers from which electronic data services of interest to the user can be obtained. The service terminal may obtain listings of data from remote data sources and/or service providers and display these on the graphical user interface and/or user interface. The user may instruct downloading of electronic data or electronic information services from remote data sources or service providers from the service terminal for delivery to the graphical user interface or the user interface.

Application Filing Date (1):
19970708

Brief Summary Text (4):
Various convenience services are available to travelers, particularly business travelers, when staying at hotels, conference centers, airport departure lounges and the like. Such services are intended to enable improved convenience to travelers when away from home or away from their work base, and are used by hotel groups, conference groups, etc as a service differentiator to attract corporate customers to stay in their hotels or attend their conference centers.

Brief Summary Text (10):
A third example of a service offered by hotels, airlines, etc provides a rudimentary form of customization of customer details by monitoring usage and behavior patterns of customers through the use of "guest" clubs and loyalty card schemes involving cards having magnetic stripes. Such schemes require filling in questionnaire forms, however customers are often reluctant to fill in questionnaire forms, and there is a burden in collecting and gathering questionnaire forms with a result that customer information is irregularly and infrequently updated. A customer has no access to information held on a database storing information collected from a questionnaire and has no direct involvement or control in extending or limiting the scope of services offered by the service provider.

Brief Summary Text (12):
One object of specific methods and embodiments according to the present invention is to provide a customized set of electronic services to a user at a public access location, for example a hotel, conference center, hospital or airport lounge.

Drawing Description Text (6):
FIG. 4 illustrates an arrangement of data and a relationship between data items resident in a database of the service terminal facility of FIG. 1 herein;

Drawing Description Text (7):
FIG. 5 illustrates a data flow diagram between data resident in the database, and a set of algorithms operated by the service terminal device;

Detailed Description Text (8):
hotel/hospital/airport information

Detailed Description Text (22):
The personalized user specific data is downloaded into a database and stored in an area of the database which is related to the users name, or a room number in which the user is staying.

Detailed Description Text (24):
Referring to FIG. 4 herein, an example of a layout of stored data in a database 400 is illustrated. Each user is identified by a user reference number or other identification code, in an area of memory of the database which may be part of the user specific data downloaded from the card, or may be input at a data entry device of service terminal 100. The reference number/identification code data identifies the user. The processor 201 operates an algorithm which reads the user data on the smart card, and stores the user data in database 400, and operates another algorithm which relates the locally stored user data to a set of user interfaces, eg the user interfaces provided in the user's room. Each user is allocated his or her own area of database, in data storage means 203, and is allocated his or her own user interface, which corresponds to a location in which the user is staying. Typically a room number in which the user is staying is typed in via graphical user interface 204. The user data specifies personal preferences or other information as described above in the form of data types. The database stores user data of a plurality of users, the user data of each user being protected and inaccessible to other users. The database also stores a set of service data comprising a list of electronic addresses or dial-up numbers of remote data sources and service providers, together with data which identifies the type of data and services available for retrieval from those data sources and service providers. In a general data area of database 400, there is stored locally a set of general data describing categories of general information, such as leisure interests, travel arrangements, local restaurants, which is accessible to all users of the service terminal facility. The processor operates a set of search and display algorithms which, for each set of user data input to the service terminal, searches the user data for pre-determined data types indicating personal preferences of information, searches the locally stored data for service data items which correspond to the identified data types, such as data describing services available from remote data sources and service providers to find data services which match the data types identified in the user data, retrieves data items from the locally stored data and displays retrieved data items and data describing available services on a user interface of the user, the selection of data items and data describing services being determined by the data types identified in the user data. For each set of user data input to the service terminal, the service terminal operates to read the input user data, compare the input user data with the data which identifies pre-determined data sources and service providers, and identifies data sources and service providers from which electronic data services can be obtained, corresponding to the preferences specified in the user data input from smart card 109. Similarly, the user data is compared with the categories of locally stored general information data, and general data items corresponding to user specified preferences indicated in the downloaded user data. Items of data from the general data may be directed to the appropriate user interfaces for display, for example on a scroll type display in which data items are continuously scrolled over a TV monitor, or other display,

in which headings of information categories are displayed. Data corresponding to specified user preference data types retrieved from the general area of database 400 are sent to a display terminal, for example TV monitor 107 in the user's hotel room, for display.

Detailed Description Text (25):
Referring to FIG. 5 herein, there is illustrated a data flow between database 400 and the search and display algorithms operated by processor 201. Items of user data 500 are retrieved by user data search algorithm 501, which searches the user data for categories of data, for example data concerning leisure interests, travel interests, etc. The user data search algorithm classifies data types corresponding to the user data, and signals to a general data search algorithm 502 to search general data area 503 of database 400 for data entries contained within general data which correspond to the categories specified in the user data. The general data search algorithm 502 also searches through service data area 504 comprising addresses of data sources and service providers, to retrieve data describing abbreviated information on types of data and services available from the data sources and service providers, addresses of which are stored in the service data 504. The general data search algorithm sends results of the search to the user data search algorithm, or directly to data display algorithm 505 for displaying results of the search of general data and data source/service providers on a user interface related to the user. Users may select data and/or services through the data display and retrieval algorithm 503, which receives a request from a user for data and/or services and can obtain user specified data from the general data area 503 of the database, and/or directly from the data sources and service providers 505.

Detailed Description Text (26):
Referring to FIGS. 1 to 6 herein, there will now be described a general overview of operation of the service terminal facility and its interaction with remote data sources and service providers. In step 600, a user inputs portable data storage medium 109 into the card reader data input port of service terminal 100. Data is downloaded from the portable data storage medium into data storage device 203 of service terminal 100 which stores the user data in a user data area of database 400 in step 601. In step 602, processor 201 operates under control of user data search algorithm 501 to search the stored user data and identify data types specified in the user data. The data types may correspond to personal preferences of information, or any data identified in FIG. 3 or hereinbefore as being user data. In step 603, processor 201 operates under control of general data search algorithm 502 to search general data area 503 for pre-stored data items stored on the database 400 to identify data items which correspond to data types identified in the user data in step 602. In step 604, identified data items corresponding to data types contained in the user data are retrieved by the processor 201 operating under control of general search algorithm 502. In step 608, retrieved data items are displayed on a user interface corresponding to a room or other location which has been assigned to the user, the assignment being made by way of relationship between a user identifier code or number downloaded from the user data and a room number or location number in database 400. In step 605, processor 201 operating under control of general data search algorithm 502 searches service data area 504 containing data describing remote data sources, to identify possible sources of data and data services which match the data types identified in step 602 in the downloaded user data. In step 606, where remote data sources or remote service providers have been identified having data or services which correspond to the data types found in the user data in step 602, data describing those data sources and service providers may be displayed on the user interface assigned to the user and the user may operate the user interface to retrieve electronic services or data from the identified remote data sources and service providers in step 606. In step 607, data or services may be delivered to the user interface directly from the remote data sources and service providers.

Detailed Description Text (28):

The smart card may contain a keyword or other verification data necessary for remotely obtaining the user specific data from the remote data source. The keyword may be stored on the smart card, and addressed in step 600. Security of data within the system may be ensured by requirement for a user to type in a password at the service terminal in order to download the remote access data from the smart card to the service terminal. The service terminal may then make the appropriate connections across a communications network, the internet, etc to the remote data source, which may require a keyword or encryption code before the remote data source will release the user specific data. Such a keyword may be stored on the smart card, and may only be operated once the user has typed in his own personal password at the service terminal. The service terminal requires authorization by the stored keyword in order to access data remotely. The keyword is not downloaded to the service terminal, but resides on the smart card. The smart card communicates direct with the remote data source for any communications requiring key word authorization. The level of security required for obtaining user specific data from the remote data source may be specified by the user, and may range from no personal identification numbers or keywords at all, other than the password typed in at the service terminal when the user presents the smart card to the service terminal, up to a "digital electronic signature" system used for transfer of user specific data from the remote data source containing that user specific data to the service terminal, in which transfer of user specific data is verified by a digital signature (a keyword).

Detailed Description Text (29):
At a highest level of security, using a digital electronic signature confirmation of an identity of a caller may be verified using the private or public encryption system as hereinbefore described. Typically, a private encryption system comprises an encryption algorithm and a decryption algorithm, each of which are stored on the key device and at an agent device at the remote data source. The encryption algorithm operates to encrypt data using a keyword signal, for example a personal identification number or sequence of digits or mnemonics which is unique to the user. Both the service terminal and the user's remote data source must use the same keyword to enable encryption and decryption of data. The decryption algorithm decodes the encrypted data using the keyword. On successfully decrypting a signal from the caller, the agent device allows access to the appropriate user specific data. The agent may send the requested user specific data to the service terminal in encrypted form and the decryption algorithm stored on the key device is used to decrypt the data sent by the agent. The decryption algorithm stored in the key device requires knowledge of the keyword in order to decrypt the received encoded data.

Detailed Description Text (30):
In the known public key system, there is provided an encryption algorithm and a decryption algorithm stored both on the key device and at the agent. The public key system uses a public keyword and a private keyword both of which are specific to the caller. For use in electronic signing the caller communicates to the agent via the service terminal using signals which are encrypted using the private keyword, and the agent device decrypts the received signals using the public keyword, and recovers the original encrypted signals, which represents the user's "electronic signature" and identifies with the user. In the public key system all parties must register with a central administration body who controls access to the algorithms and keywords. Electronic signatures are registered to subscribers of the system by the administrating body, who is trusted to ensure that users are identifiable by reference to their keywords.

Detailed Description Text (31):
Referring to FIGS. 1 to 7 herein, there will now be described a process for selecting data from general database area 503 stored locally in data storage device 203 of the service terminal, in accordance with user specified preferences contained in the user data. In step 700, the portable data storage device, eg smart

card 109 downloads user data into service terminal 100 using a conventional data transfer protocol. Service terminal 100 identifies data types contained in the user data in step 701, for example data specifying favorite leisure activities such as golf, and searches its internal general information database 503 stored on database 400 for data items relating to the specified leisure activity, eg golf. Such information stored on local information base within database 400 may include addresses and telephone numbers of local golf course and golf ranges, including opening times. In step 703, the service terminal searches the data source/service provider data 504. The general data search algorithm compares the data types identified in the user data stored in general data area 503 and selects data items corresponding to the identified data types. The service terminal retrieves the selected data from the local information base and sends the information to the display device in the user's hotel room, for example TV monitor 102 in step 704.

Detailed Description Text (32):
Referring to FIGS. 1 to 6 and 8 herein, there is described a process of operation of a service terminal for obtaining electronic information services corresponding to data and service types specified in the user data stored on data storage device 203. In step 800, the user inputs the portable data storage device into the card reader data input port 200, and the user data is downloaded and stored in database 400 in the form shown in FIG. 4 herein. The user data may specify specific addresses, for example internet addresses, corporate network addresses or telephone numbers from which data and/or services selected by the user can be accessed. One example of such data may be the telephone number of a corporate telecommunications network within a particular country or locality. In step 801, the service terminal communicates with a data source, via interface 205 by dialing the address data specified in the user data. In step 802, the service terminal may retrieve data or services from the user specified data sources or service providers. In step 803, there are identified data sources/services providers having data or services corresponding to identified data types. In step 804, there is displayed date/service types available on said delivery terminal, e.g. a TV monitor.

Detailed Description Text (33):
Referring to FIG. 9 herein, as another example, In step 900 user data is input including user specific address data specifying addresses of data sources/service providers in step 901, the service terminal communicates with a data source having an address specified in the user data downloaded from the portable data storage medium. The service terminal may interrogate, over a communications network and via interface 205, the remote service provider or data source, and retrieve a list of available data and/or services from that data source in step 902. The list of available data and/or services may then be stored in the database 400 of the service terminal, and/or may be sent to the display device, eg TV monitor 102 in the guest's hotel room, for display in step 903 to alert the user that such data and/or services are available.

Detailed Description Text (36):
In addition to providing personalized electronic data services for delivery to a user at a user interface assigned to the user by the hotel, the service terminal facility may be used to streamline the check-in process at the hotel, and provide the hotel with contact information on the user in case of illness or accident. The downloaded user data contains data describing information concerning the user's home telephone contact numbers, medical information such as blood group, whether an organ donor, details of home address and citizenship, car registration number, and other such details as may normally be required on checking into a hotel. Downloading the information from the portable data storage medium 109 may replace filling in forms on checking into the hotel. The downloaded user data may be password protected, allowing the operators of the service terminal, ie hotel employees, access to general details about the user, whilst maintaining the user's personal preference data contained within the user data in a confidential area when downloaded into database 400.

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